

**CLAIMS**

1. A motor function test system comprising a chair (1) for a motor function test comprising a seat (12) endowed with at least one pressure sensor (14) and armrests (13) each endowed with at least one pressure sensor (14), means (2) suitable for detecting inclinations of the torso of a subject, an electronic data processor (5) of such as to receive signals emitted by said at least one pressure sensor (14) and from said means (2) when stimulated, and of such as to collect said signals and process the corresponding descriptive parameters.

2. The motor function test system according to claim 1, comprising in addition at least one pair of optical detectors (4) placed at the beginning and at the end of an established route which said subject must encounter.

3. The motor function test system according to claims 1 or 2, wherein the transmission of the signals from said pressure sensors (14), from said means (2) and from said pair of optical detectors (4) to said electronic data processor (5) is carried out using wireless technology.

4. The motor function test system comprising a chair (1) for a motor function test endowed with at least one pressure sensor (14) positioned on the seat (12), means

(2) suited to detecting inclinations of the torso of a subject, at least one pair of optical detectors (4) placed at the beginning and end of an established route which a subject must encounter, an electronic data processor (5) of such as to receive the signals emitted by said at least one pressure sensor (14), by said means (2) and by said pair of optical detectors (4) when stimulated, and of such as to collect said signals and process the corresponding descriptive parameters.

10        5. The motor function test system according to claim 4, wherein the transmission of the signals from said pressure sensors (14), from said means (2) and from said pair of optical detectors (3) and said electronic data processor (5) is carried out using wireless technology.

15        6. The motor function test system comprising a chair (1) for a motor function test endowed with at least one pressure sensor (14) positioned on the seat (12), means (2) suited to detecting inclinations of the torso of a subject, an electronic data processor (5) of such as to  
20 receive the signals emitted from said at least one pressure sensor (14) and from said means (2) when stimulated, and of such as to collect said signals and process the corresponding parameters, wherein the transmission of the signals to said electronic data  
25 processor (5) is carried out using wireless technology.

7. The motor function test system according to any of the claims 1 to 6, comprising in addition an interface (6) for enabling/disabling the acquisition of said signals towards said electronic data processor (5).

5        8. The motor function test system according to any of the claims 1 to 7, wherein said at least one pressure sensor (14) is mounted onto a flexible support.

9. The motor function test system according to claim 8, wherein said at least one pressure sensor (14) is a  
10 thin resistive sensor made with a sensitive film placed between two flexible polymeric sheets, preferably said at least one pressure sensor is of the type Interlink Electronics Europe FSR154 on the seat (12), whilst it is of the type Interlink Electronics Europe FSR648AS on the  
15 armrests(13).

10. The motor function test system according to any of the claims 1 to 9, wherein said means (2) suitable for detecting inclination of the torso of a subject comprising a pair of inclinometers (A,B).

20        11. The motor function test system according to claim 10, wherein said pair of inclinometers (A,B) is constituted by a first inclinometer (A) appointed to measure the inclinations of the torso of a subject in the anterior-posterior plane and a second inclinometer (B)  
25 appointed to measure the inclinations of the torso of

said subject in the mediolateral plane.

12. The motor function test system according to claims 10 or 11, wherein said pair (2) of inclinometers (A,B) are of the type Midori Precision PMP-S30TX.

5 13. The motor function test system according to any of the claims 10 to 12, wherein said pair (2) of inclinometers (A,B) are mounted onto a support (15) constructed in such a manner as to allow the orientation of the respective planes of maximum sensitivity of said  
10 inclinometers (A,B) perpendicularly to one another.

14. The motor function test system according to claim 13, wherein said support (15) comprises two parallel plates inner (16) and outer (17) connected to one another in such a manner as to rotate one with  
15 respect to the other around an axis perpendicular to their plane.

15. The motor function test system according to claim 14, wherein said inner plate (16) is movably mounted onto an elasticised strap (22) through a  
20 buttonhole (23) and is engaged with two braces (24) through two corresponding buttonholes (25) in order to allow that a subject may wear said pair of inclinometers (2).

16. The motor function test system according to any  
25 of the claims 2, 3, 5 and from 7 to 15, wherein said at

least one pair of optical detectors (4) are represented by two pairs of photocells or two pairs of photocell-reflectors or similar devices suitable for detecting the passage of a subject through them.

5       17. The motor function test system according to any of the claims 1 to 16, wherein said interface (6) enables/disables the acquisition of the electrical signals originating from said pressure sensors (14) and/or pair of inclinometers (2) and/or pair of optical  
10 detectors (4).

      18. The motor function test system according to any of the claims 3 and from 5 to 17, wherein said transmission of the electronic signals uses radiofrequency systems, in particular carried out  
15 according to the Bluetooth 1.1 international standard or the like.

      19. The motor function test system according to claims 1 to 18, comprising in addition a button (3) connected to said electronic data processor (5) in order  
20 to indicate the beginning and possibly the end of the various stages of which the motor function test is composed.

      20. A method for the acquisition and collection of signals and their processing into the corresponding  
25 parameters for a motor function test comprising the

following stages in sequence:

a) providing a motor function test system according to any of the claims 1 to 19;

b) applying to a subject to be tested the means (2) suitable for detecting inclinations of the torso of said subject;

c) detecting the pre-established movements of such subject by means of said means (2) and possibly the at least one pressure sensor (14) and possibly the optical detectors (4);

d) transmitting the signals corresponding to said detection achieved in stage c) to the electronic data processor (5);

e) collecting and processing said signals originating from said at least one pressure sensor (14) and/or from said means (2) and/or from said optical detectors (4) in such a manner as to obtain parameters representative of the degree of ambulation and or posture of said subject.

21. The method according to claim 20, wherein said detection stage c) is achieved by detecting variations in pressure and/or inclination and/or the passing respectively between said pressure sensors (14), said means (2) and said at least one pair of optical sensors (4).

22. The method according to claims 20 or 21, wherein said transmission stage takes place using cable or wireless technologies.

23. The method according to claims 20, 21 or 22,  
5 wherein said stage of collection and processing of the signals originating from said pressure sensors (14) and/or from said means (2) and/or from said at least one pair of optical sensors (4) by said electronic data processor (5) comprises the transformation of the signals  
10 into the digital data from which said parameters are obtained.

24. The method according to claim 23, wherein the aforementioned parameters are numerical morphological parameters which may be further processed and combined  
15 with the aim of obtaining a single performance index.